

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Please amend claim 52 as shown below.

Please cancel claims 55-57.

Please add new claim 58.

Please add new claim 59.

STATUS OF CLAIMS

Claims 1-51 (Previously Withdrawn from Consideration)

Claim 52 (Third Amendment) 52. A method for controlling a stream of liquid and air segments, comprising:

wherein each test package comprises the method

C/ selectively aspirating liquid segments and air segments into a first fluid conduit in a plurality of cycles, each cycle beginning with the aspiration of a first air segment and ending with the aspiration of a final air segment, said first and final air segments [of] each having a volume;

actuating a valve so as to couple said first conduit to a second conduit;

transferring the liquid segments and the air segments of each *a first* of said plurality of cycles from said first fluid conduit to [a]

said second fluid conduit;

closing said valve in order to adjust[ing] the volume of the final air segment of each cycle after the final air segment has moved into said second fluid conduit;

actuating said valve so as to connect said second fluid conduit to a third fluid conduit;

transferring the liquid segments and the air segments of each of said plurality of cycles from said second fluid conduit to a third fluid conduit; [and]

where detecting an interface between a final liquid segment and the final air segment; *which test package*

C/ stopping the flow of said liquid segments and air segments and closing said valve in response to the detection of said interface so as to adjust[ing] the volume of the first air segment of each cycle [after the first air segment has moved into said third fluid conduit wherein] whereby the volume of the final air segment is adjusted to equal an optimal volume. [; and

wherein said volume of the first air segment is adjusted according to a feedback loop.]

Claim 53-54 (Previously Cancelled)

Claim 55-57. (Cancelled)

Claim 58 (New) The method of claim 52 further comprising the steps of flowing the liquid segments and air segments of each of said plurality of cycles in a forward and reverse direction in said third fluid conduit past a detector placed at a pre-determined point along said third fluid conduit.

Claim 59 (New) The method of claim 58 wherein said interface is detected when said plurality of cycles are flowing in a reverse direction.

C1 Claim 60 (New) The method of claim 52 wherein upon detection of the interface flow is stopped and the valve is closed after a pre-determined time delay, said delay being normalized around a predetermined nominal center point delay according to a feedback loop.

